

REMARKS

Claims 1-26 are pending in the current application. Claim 14 stands rejected under 35 U.S.C. § 112 as lacking proper antecedent basis, whereas claims 18-21 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Paschke (U.S. Patent Number 6,558,250). Claims 1-4, 8-13, 15, and 22-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paschke in view of Schwab (U.S. Patent Number 3,204,391). Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Paschke in view of Schwab and in further view of Dixon et al. (U.S. Patent Number 3,870,495, hereinafter "Dixon"). Finally, claims 6 and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Paschke in view of Schwab and in further view of Murray et al. (U.S. Patent Number 6,217,437, hereinafter "Murray"). Claim 16 was not discussed in the Office Action. Applicants respectfully request reconsideration and allowance of all pending claims.

35 U.S.C. § 112 Rejection:

Claim 14 depends from claim 13 and stands rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention. As noted above, Claim 14 has been amended to correct a lack of antecedent basis for the "each step" limitation. The claim has been modified to recite "each strip" in reference to the strips recited in claim 13. Claim 14, as amended, is no longer indefinite and is in a condition for immediate allowance.

35 U.S.C. § 102(a) Rejections:

Claims 18-21 stand rejected under § 102(a) as being anticipated by Paschke. Independent claim 18 has been amended to recite a releasable circumferential connector adapted to connect sections of fabric duct together with a first strip of polymer material that has a base from which at least one protrusion extends radially. The connector also includes a second strip of polymer material with a base from which at least two protrusions extend radially to form a void therebetween wherein the at least one protrusion of the first strip is adapted to frictionally fit into the void of the second strip. Each of the polymer strips is attached to one section of the fabric duct.

Paschke, on the other hand, does not teach a circumferential connector with two strips of polymer, both strips having radially extending protrusions. Paschke's connector (46), as

referenced in the office action, shows a “zipper” in which multiple protrusions extend axially from a base. Paschke’s zipper-type of connector could not function properly if its protrusions extended radially from a base, as claimed here. Thus, Paschke does not teach the circumferential connector as recited in claim 18 of the current application, leaving claim 18 and the claims depending therefrom in a condition for immediate allowance.

35 U.S.C. § 103(a) Rejections - Claims 1-11:

Independent claim 1 stands rejected under § 103(a) as unpatentable over Paschke in view of Schwab. Claims 2-11, which depend from claim 1, stand rejected under § 103(a) as unpatentable over Paschke in view of Schwab, and in some cases in further view of a third reference (Dixon for claim 5 and Murray for claims 6 and 7). For purposes of this response, only independent claim 1 will be addressed in detail below but the arguments asserted apply with equal force to claims 2-11.

Independent claim 1 recites an air duct system comprising an air duct to convey a stream of air, wherein the air duct has a tubular shape and a fabric wall. The air duct system also has an inflatable filter with a conical shape attached to the fabric wall such that substantially the entire stream of air passes through the filter.

Paschke teaches a fabric flow restriction consisting of flexible fabric that tends to conform to the changing shape of the fabric duct. In some embodiments, Paschke’s “flow restriction is removably installed by virtue of a zipper or a touch-and-hold fastener” (col. 2, lines 4-5). Paschke does not mention any type of filter (the focus of the current application), as it is directed only to an apparatus to restrict or alter the flow of air through the duct system for the stated purpose of being able to balance the overall airflow in the system.

Schwab, on the other hand, does disclose a filter with bags that are “generally conical, wedge-shaped, [or] pyramidal” (col. 2, lines 50-51), but the filter of Schwab is also intended to be used in a traditional rigid duct system. “The means for securing the filter F in a duct comprises a frame 10 shaped to conform to the cross-section of the duct and constructed of right angle stock,” with “[t]he frame 10 and clips 18 . . . formed of any fairly rigid material such as metal . . .” (col. 2-3, line 61 et seq., emphasis added). This filter is quite different than the flexible duct and frame system disclosed in the application at issue.

Perhaps more importantly, there is no hint in either Paschke or Schwab of a motivation that would lead one of ordinary skill in the art to combine the two references to reach the subject matter of the current application. In fact, the two references may actually teach away from the current application. For example, Paschke states that, "the pliability of fabric may inhibit the duct from effectively supporting the weight of a metal damper without excessive distortion or sagging of the duct." Further, "[w]hen the duct is deflated, a metal damper may create an unsightly bulge of the duct." Schwab, in fact, actually teaches away from a combination of its conical filter with the fabric connecting collar of Paschke when it states, "[t]he means for securing the filter F in a duct comprises a frame 10 shaped to conform to the cross-section of the duct and constructed of right angle stock having legs 12 and 14," wherein, "[t]he frame 10 and clips 18 may be formed of any fairly rigid material such as metal ..." (col. 2-3, line 61 et seq., emphasis added). The rigid frame taught by Schwab is exactly the type of structure Paschke teaches away from, making it extremely unlikely that one of ordinary skill in the art would combine the two references to result in the subject matter claimed here.

Moreover, the combination suggested by the Office Action would require a modification of the Schwab structure that is in direct contravention of its explicit teaching. As demonstrated above, Paschke states that a metal damper (and by extension, the rigid, metal frame of Schwab) is undesirable. Accordingly, one combining Paschke and Schwab would presumably eliminate the metal frame - which requires ignoring the statement in Schwab establishing the rigid, metal frame as the sole means for securing the filter to the duct. This required ignorance of the teachings of Schwab further suggests that the obviousness rejection is unfounded. Finally, the addition of Dixon (applied to claim 5) or Murray (applied to claims 6 and 7) does nothing to cure the deficiencies of Paschke and Schwab, leaving claims 1-11 in a condition for immediate allowance.

35 U.S.C. § 103(a) Rejections - Claims 12, 13, 15, 17:

Independent claim 12 also stands rejected under § 103(a) as unpatentable over Paschke in view of Schwab, as do claims 13 and 15, which depend therefrom. Claim 17 also depends from claim 12 and stands rejected under § 103(a) as unpatentable over Paschke in view of Schwab and in further view of Townsend. For purposes of this response, only independent claim 12 will be addressed in detail.

Independent claim 12 recites an air duct system comprising an air duct that conveys a stream of air, wherein the air duct has a tubular shape and a fabric wall. The air duct system also has an inflatable filter with a conical shape attached to the fabric wall such that substantially the entire stream of air passes through the filter, two releasable circumferential connectors coupling the inflatable filter to the air duct, and a removable collar attached to the inflatable filter and each of the two releasable circumferential connectors.

The arguments detailed above in connection with claims 1-11 and the inapplicability of Paschke and Schwab to those claims apply with equal force to claims 12, 13, 15, and 17 and need not be duplicated here. In sum, the two references seem to teach away from each other and, more importantly, away from the subject matter of the current application. The Townsend reference does nothing to cure this deficiency with regard to claim 17. Claims 12, 13, 15, and 17 are in a condition for allowance.

35 U.S.C. § 103(a) Rejections - Claims 22-26:

Finally, independent claim 22 and the claims that depend therefrom (23-26) stand rejected under § 103(a) as unpatentable over Paschke in view of Schwab. Independent claim 22 has been amended to recite an air duct system comprising an air duct with a tubular fabric wall, an inflatable filter with a conical shape, and a releasable circumferential connector joining the inflatable filter to the air duct. The releasable circumferential connector has a first strip attached to the air duct with a base from which at least one protrusion extends radially, and a second strip attached to the inflatable filter with a base from which at least two protrusions extend radially to form a void therebetween. The at least one protrusion of the first strip is frictionally interfit into the void of the second strip.

Paschke, on the other hand, does not teach a circumferential connector with two strips of material, wherein both strips have radially extending protrusions. Paschke's connector (46), as referenced in the office action, shows a "zipper" in which multiple protrusions extend axially from a base. Paschke's zipper-type of connector could not function properly if its protrusions extended radially from a base, as claimed here. Thus, Paschke does not teach the circumferential connector as recited in independent claim 22 of the current application. Schwab, as discussed in detail above, does not cure the deficiency related to the circumferential connector as Schwab teaches the use of a rigid frame with clips and thumb screws attaching the filter to the duct system. Thus, Paschke and Schwab cannot be

combined in a manner that would lead one of ordinary skill in the art to the claimed invention, leaving claim 22 and the claims depending therefrom in a condition for immediate allowance.

CONCLUSIONS

The Applicants have amended the claims to address the § 112 rejection, the § 102 rejections, and certain § 103(a) rejections. Further, Paschke and Schwab, alone or combined, have been shown to be deficient, alleviating the remaining § 103(a) rejections. Based on the foregoing, claims 1-26 are in a condition for immediate allowance.

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